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REMARKSRequest for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the position that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the amendments to the specification, the amendments to the claims, the attached Declaration of Mr. Sasa and the following remarks.

Claims Status

Claims 1, 4, 6 and 9-12 are pending in this Application.

Claim 1 has been amended to add the limitations of Claim 3 with the proviso that p1 and q1 are 1. Claim 3 has been canceled.

Specification Amendments

The Specification has been amended herein to correct obvious typographical errors.

Invention

One of the novel aspects of the present Invention is the fact that the epoxy compound that is employed is that as recited in formulas (2) or (3) in amended Claim 1 and the fact that this epoxy compound has a methyl group at the root or base of each of the epoxy groups. It is respectfully submitted that neither of the references teach or suggest the improvements that can be obtained with using such a specific epoxy compound as recited in Claim 1. In order to emphasize the superiority of active energy ray curable compositions containing epoxy compounds having the methyl groups at the root of the epoxy group, tests have been performed using exemplary epoxy compounds from EP '748 which do not have methyl group at the root of the epoxy group. These tests are reported by way of a Declaration of Mr. Sasa and will be discussed in more detail below.

Claim Rejections

Claims 1, 3, 4, 6 and 12 have been rejected as being unpatentable over a combination of EP '748 and Takai while Claims 10 and 11 have been rejected as being unpatentable over a combination of EP '748, Takai, Yatake, Oka and Shirakawa.

EP '748 and Takai have been cited to teach compounds of general formula (1).

Claim 1 has been amended herein to delete general formula (1) and replace it with general formulas (2) and (3). Furthermore, it will be noted that formula I and formula II of EP '748 as well as formula (I) of Takai do not specifically teach that their R_1 and R_{18} or their R_9 and R_{10} should be the same or that they should be methyl groups. Moreover, it is submitted that, given the broad teaching in both Takai and EP '748, one is not specifically directed to the chemical compound as recited in general formulas (2) and (3) as recited in the claims.

In addition, in order to demonstrate the uniqueness of a compound as recited in formulas (2) and (3) compared to the broad teachings of Takai and EP '748 and, specifically, to show the difference between having a methyl group present at the root of each of the epoxy groups, tests have been performed and are reported herein by way of a Declaration of Mr. Sasa.

In the Declaration of Mr. Sasa, he makes two active ray curable compositions. Both of these ray curable compositions employ epoxy compounds that do not have methyl groups at the root of their epoxy groups. Specifically, Mr. Sasa employed Epoxy 1 and Epoxy 2 as recited on page 15 of EP '748. Mr. Sasa then formulated two epoxy compositions using the formulation of Composition 1 as recited in Table 3 on page 72 of this

Application in that he replaced the epoxy compound Example Compound 9 with an equal amount of Epoxy 1 and Epoxy 2 to arrive at the two comparative active ray curable compositions. Then compositions, prepared using Epoxy 1 and Epoxy 2, were tested in accordance with Example 2 of this Application. The results from these tests are reported in the Table attached to Mr. Sasa's Declaration.

As can be seen by the data in the Table attached to Mr. Sasa's Declaration, compositions that contained Epoxy 1 and Epoxy 2 were far inferior to compositions that contained epoxy compounds in accordance with the present Invention. It will be noted that Mr. Sasa attests to the fact that the compositions Compounds 1 through 10, as recited in Table 3, and the results as reported in Table 4 were, in fact, run and the results were, in fact, obtained. Thus, it is fair to compare the results from Table 4 in the Application to the results reported in the Table attached to Mr. Sasa's Declaration.

Focusing on Table 4 on page 77, it can be seen that compositions 1-5, which are the present Invention, each epoxy had a "Safety" rating of "A" while Epoxy 1 and Epoxy 2 of EP '748 had a rating "C", which meant bulla, welts, occurred.

For "Safety of the Composition", made with the epoxys, the present Invention shows nearly no effect on the skin, an "A" rating, while the composition containing Epoxy 1 and 2 of EP '748 each produced reddening of the skin, rating "B".

For "Stability" of the composition, Compositions 1-5 had no precipitation, an "A" rating, while Epoxy 1 and 2 of EP '748 had precipitation, a "C" rating.

Looking at "Curability", Composition No. 3, cured by method 3, used exposure energies of 50, 50 and 100, compared to Epoxy 1 and 2 of EP '748 which used exposure energy of 200, 500 and 1000. Thus, Epoxy 1 and 2 used 4 to 10 times more energy to cure. Surely, a difference of 4 to 10 times is not "obvious" or insubstantial. Quite the contrary. It is substantial and non-obvious.

Look at "Film Strength", Composition 3 showed no peeling even when scratched while Epoxy 1 and 2 of EP '748 showed peeling when scratched.

For "Solvent Resistance", when the film of Composition 3 was immersed in alcohol, it showed no change, while Epoxy 1 and 2 of EP '748 showed evident breakage and shrinkage.

Finally, for "Durability", i.e. water resistance, Composition 3 of the present Invention showed no change when immersed in warm water, while Epoxy 1 and 2 of EP '748 showed slight breakage and shrinkage.

In view of the enormous difference between the compositions that contained Epoxy 1 and Epoxy 2 of EP '748 and the compositions that contain epoxy in accordance with the present Invention, it is respectfully submitted that it would not be obvious to one of skill in the art to employ epoxy compounds that had methyl groups at the roots of each epoxy group to obtain the superior results shown in Table 4. Thus, it is respectfully submitted, that the claims as recited herein are patentable over the teachings of Takai and EP '748 taken alone or in combination since neither EP '748 nor Takai specifically teach or suggest the specific chemical formula for formulas (2) and (3) as recited in Claim 1 herein.

With respect to the other secondary references of Tatake, Oka and Shirakawa, neither one of these three references teach or suggest the specific epoxy compounds as recited in formulas (2) and (3) of Claim 1 and, thus, it is respectfully that the claims, as presented herein, are patentable over each one of the cited references taken alone or in combination.

Conclusion

In view of the foregoing and the enclosed, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested. Should any extensions of time or further fees be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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Encl: Executed Declaration of Mr. Sasa

DCL/mr